COMFORT SYSTEMS USA®

HESS MECHANICAL CORPORATION

9600 Fallard Court
Upper Marlboro, Maryland 20772
(301) 856-4700 Phone
(301) 856-4720 Fax

LETTER OF TRANSMITTAL

To:	Hess Construction	Date:	4/8/13
	804 West Diamond Avenue. Suite 300	Reference:	Loudoun County HS No. 6
	Gaithersburg, Maryland 20878		
Attention:	Eileen B. Panasewicz	HMC Project No.:	576

WE ARE SENDING YOU:

[X] Attached [ ] Under Separate Cover via _____ the following items:

[ ] Shop Drawings	[ ] Prints	[ ] Subcontract	[ ] Purchase Order	[ ] Specifications
[ ] Copy of Letter	[ ] Change Order	[ ] Samples	[ ] Mfr's Data	[ ] Plans
[ ] Certification	[ ] Payroll	[ ] RFI	[X] Submittals	[ ] Other

Copies	Date	Number	Description
Electronic	4/8/13	S-07	Split System A/C units

[X] For Approval	[ ] For Review & Comment	[ ] Make Corrections Noted	[ ] Resubmit 14 copies for approval	[ ] Prints Returned After Loan To Us
[ ] For Your Use	[ ] Approved as Submitted	[ ] Revise & Resubmit	[ ] Return 4 copies for distribution	[ ] Signature Required
[ ] As Requested	[ ] Approved as Noted	[ ] Rejected	[ ] Return corrected prints	[ ] Other

REMARKS

Copy To: Field

Signed: _____

HESS MECHANICAL CORPORATION

9600 Fallard Court
Upper Marlboro, Maryland 20772
(301) 856-4700 Phone
(301) 856-4720 Fax

Submittal Cover Sheet

To: Hess Construction	Date: 4/8/13
804 West Diamond Avenue. Suite 300	Project: Loudoun County High School No. 6
Gaithersburg, Maryland 20878	Project Number: 0576
Attention: Eileen B. Panasewicz	Reference: Loudoun County HS No.6

HMC Submittal No.:	S-07	Equipment:	Split System A/C units
Specification Section:	23-81-26	Supplier:	Trane
Drawing Number:	M-131	Reviewed By:	Bryan Miesowitz

All units are R 410 A which is HCFC free and meet the EA 4 Credit

This shop drawing has been reviewed and determined to be in compliance with the Contract Documents, including Plans and Specifications as modified by addenda, change orders, and field orders as of the date of this submittal.

Project Manager _____ Date _____

CONSTRUCTION MANAGER'S/ARCHITECT'S REVIEW STAMP:

Submittal

Prepared For:
2RW Consultants, Inc
100 10th St NE, Suite 102
Charlottesville, VA 22902

Date: *March 31, 2013*

Sold To:
Hess Mechanical
9600 Fallard Court
Upper Marlboro, MD 20772

Job Name:
Loudoun HS 6, LCPS

Trane U.S. Inc. is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product
2	Split System Air Conditioning Units (Small)

Contractor Coordination Notes:
#1 Contractor to coordinate disconnect switch sizing per the electrical data submitted within this document

Engineer Coordination Notes:
#1 N/A

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Prepared by: Jason Mindlin
Reviewed by: Chris Wood
Trane
30 West Watkins Mill Road
Gaithersburg, MD 20878
Phone: (240) 306-3000
Fax: (240) 306-3300

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Split System Air Conditioning Units (Small) 12

Tag Data - Split System Air Conditioning Units (Small) (Qty: 2)

Item	Tag(s)	Qty	Description	Model Number
A1	AH/HP-O-1, AH/HP-O-2	2	1 - 6 Ton Unitary Split Systems (SSC)	4TWR5049E1000-TAM7A0C48H-1S-0----000-0--0

Product Data - Split System Air Conditioning Units (Small)

Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

4TWR5 Heat Pump Outdoor Unit
4 Ton - Nominal Cooling Capacity
Major Design Sequence
200 - 230 Volt 1 Phase 60 Hertz
Trane
Multi-poise 4-way
Best, Retail replacement hi eff varspeed
Major designs sequence
23.5 x 21.5
4 Ton air handler
High EFF Multi-speed
Power Supply
System Control Type
Head pressure control for low ambient operation to 0 deg F (Fld)
15 kW Electric Heater for 208/240V 3 Phase 60 Hertz (Fld)
5 Year Parts Warranty
MERV 13 Filter (Fld)

Clarifications & Exclusions:

1. **Disconnect switch to be provided by contractor**
2. **Basis of design AHU comes with a standard 1" filter rack. Contractor to provide 2" external filter rack with hinged access, per schedule note 7. 2" MERV 13 filter will be provided with equipment**
3. **Startup by contractor**
4. **Contractor to provide wall mounted thermostat for each split system per schedule note 12**
5. **Refrigerant piping & specialties are provided by contractor**

Performance Data - Split System Air Conditioning Units (Small)

Tags	Specified AH/HP-O-1, AH/HP-O-2	Submitted AH/HP-O-1, AH/HP-O-2
Design clg outdoor DB (F)	94	94.00
Cooling EDB (F)	80	80.00
Cooling EWB (F)	67	67.00
Clg net total capacity (Btuh)	46700	49960.00
Clg net sensible capacity (Btuh)	35400	36800.00
Calc clg LDB (F)	-	58.40
Calc clg LWB (F)	-	56.70
SEER @ AHRI (btuh/watt)	15	15.50
External static pressure (in wc)	0.5	0.5
System airflow @ 0.5" ESP (cfm)	1600	1560
ASHRAE 90.1 S6.4.1 compliant	-	Yes
Htg outdoor DB (F)	47	47.00
Heating capacity @ 47F (Btuh)	46700	47500.00
HSPF @ AHRI (btuh/watt)	8.5	9.00
Heating EDB (F)	-	64.30
Electric heat capacity @ 208 Volts (kW)	10.8	10.8
MCA/MOP Indoor Unit	42/45	42/45
MCA/MOP Outdoor Unit	29/50	28/50
Weight Indoor Unit (lbs)	180	175
Weight Outdoor Unit (lbs)	350	331

Mechanical Specifications - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

Air-Tite IITM cabinet
- 2% or less air leakage
- Precision applied - durable door seals - Specially designed air seal around refrigerant, condensate and conduit connections
- Double wall foamed cabinet system - ¿ R-4.2 insulating value
- No loose fiber design
- Smooth cleanable interior design - Sweat eliminating design
- Composite foamed cabinet doors - Water proof cabinet design
- Integrated horizontal drain pans
- Modular cabinet with 5/16" allen wrench "quick latch" design

Multi-position up/down flow horizontal left/ right
Side return option (sold as accessory)
Control board protection pocket built into cabi-net wall
Alert port to view control board codes without door removal
Alert code notification
Low voltage terminal connection point
Quarter turn phillips head door fasteners
Vortica blower with polarized plug con-nections and integrated slide deck for easy emoval
Aluminum coil with integrated slide deck for easy removal and polarized plug connections on coil EEV
Patented enhanced coil fin
Electronic Expansion Valve (EEV) with low ambient and low superheat compressor pro-tection
Dual refrigerant compatible as shipped
Slide in electric heaters with polarized plug connections (sold as accessory)
Slide in hot water coils with polarized plug connections (sold as accessory)
UVC light kit with safety switch and polarized plug connections (sold as accessory)
Labeled panels and connections
Molded in 1" standard filter rail
Variable speed ECM motor
Soft start fan motor operation
Comfort RTM mode
Built in fan delay modes
Maximum width of 23 1/2"
Compact 20 13/16" depth with doors removed
Two tone color
Fused 24v power
Safety door switch

Heater Section - 3 Phase Vertical Air Handler
A compartment is provided in the blower section for field installation of supplementary heater. Polarized plugs are provided for making electrical connections to the air handler control box from the supplementary heater.

Head Pressure Control Accessory
The Head Pressure Control (BAYLOAM***) accessory is a low voltage (24 Volts) electronic head pressure control that cycles the condenser fan motor based on liquid temperature. The addition of this field installed Head Pressure Control accessory permits cooling operation to 0 deg F [-17.8 deg C] providing that non-bleed TXV's, quick start components, and compressor crankcase heat are provided with the system when required.

Head Pressure Control
Controls fan motor (on/off) in response to outdoor ambient temperature in conjunction with liquid line temperature. Accessory provides unit cooling operation to outdoor temperatures of 0F

General - 4TWR5
The 4TWR5 is fully charged from the factory for up to 15 feet of piping. This unit is designed to operate at outdoor ambient temperatures as high as 115 F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 1995. Exterior is designed for outdoor application.

Casing - 4TWR5
Unit casing is constructed of heavy gauge, G90 galvanized steel and painted with a weather-resistant powder painton all louvers, panels, prepaint on all other panels. Corrosion and weather-proof CMBP-G30 DuraTuff base.

Refrigerant Controls - 4TWR5
Refrigeration system controls include condenser fan and compressor contac-tor. High and low pressure controls are inherent to the compressor. A factory installed liquid line drier is standard.

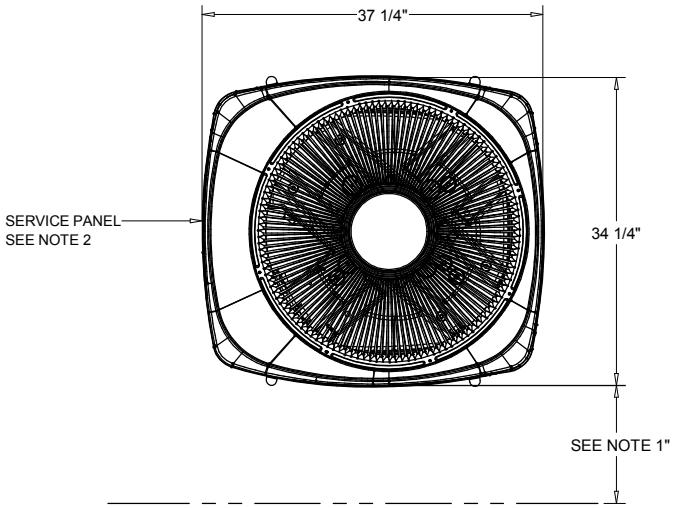
Compressor - 4TWR5
The Climatuff compressor features internal over temperature and pressure protection and total dipped hermetic motor. Other features include: centrifugal oil pump and low vibration and noise.

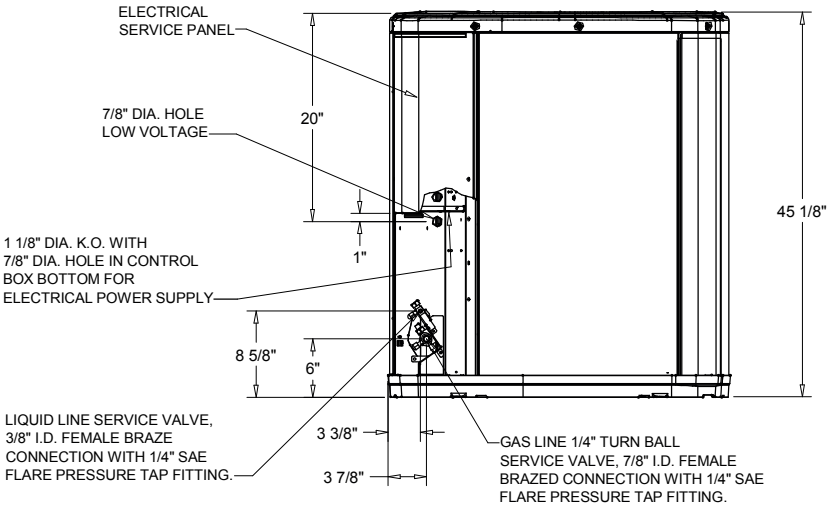
Condenser Coil - 4TWR5
The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

Low Ambient Cooling - 4TWR5
As manufactured, this unit has a cool-ing capability to 55 F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 20 F.

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.
3. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION




ELECTRICAL SERVICE PANEL
7/8" DIA. HOLE LOW VOLTAGE
20"
1"
45 1/8"
1 1/8" DIA. K.O. WITH 7/8" DIA. HOLE IN CONTROL BOX BOTTOM FOR ELECTRICAL POWER SUPPLY
8 5/8"
6"
LIQUID LINE SERVICE VALVE, 3/8" I.D. FEMALE BRAZE CONNECTION WITH 1/4" SAE FLARE PRESSURE TAP FITTING.
3 3/8"
3 7/8"
GAS LINE 1/4" TURN BALL SERVICE VALVE, 7/8" I.D. FEMALE BRAZED CONNECTION WITH 1/4" SAE FLARE PRESSURE TAP FITTING.

AIRHANDLER - 4TWR5048/49/60

OUTLINE DRAWING

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

ELECTRICAL / GENERAL DATA

GENERAL		POWER CONN.		COMPRESSOR	
Model:	4TWR5049	Minimum Circuit Ampacity:	28.0	Number:	1
Unit Primary Voltage:	208	Maximum Circuit Breaker:	50.0	Phase:	1
Unit Secondary Voltage	230	Minimum Protection Rating:	50.0	Rated Load Amps:	21.8
Unit Hertz:	60			Locked Rotor Amps:	117.0
Unit Phase:	1				

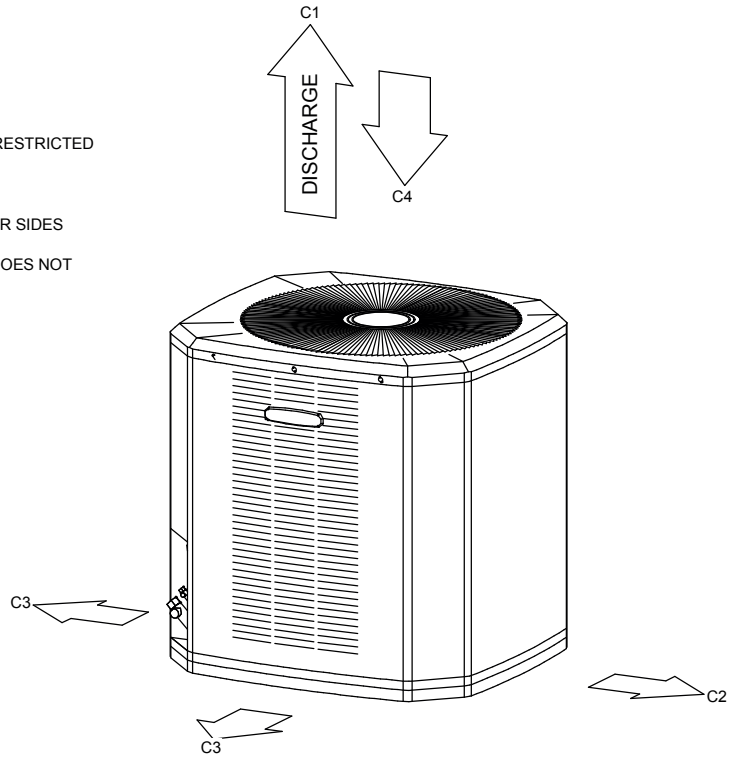
OUTDOOR MOTOR	
Number:	1
Horsepower:	0.20
Motor Speed (RPM):	825
Phase:	1
Full Load Amps:	1.00
Locked Rotor Amps:	-

REFRIGERANT	
Type:	R-410
Charge:	13.6 lb
Line Size O.D. Gas:	7/8"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line.
   For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

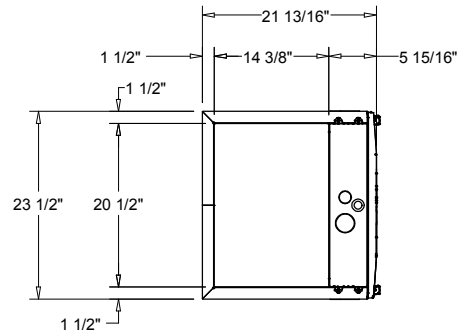
WEIGHT	
SHIPPING:	331.0 lb
NET:	294.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT

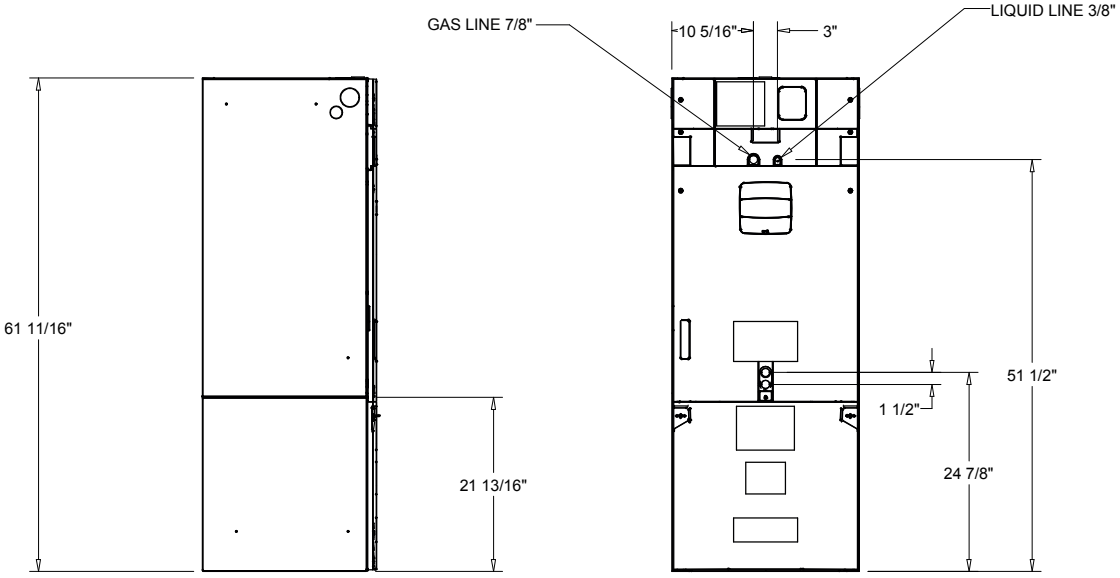


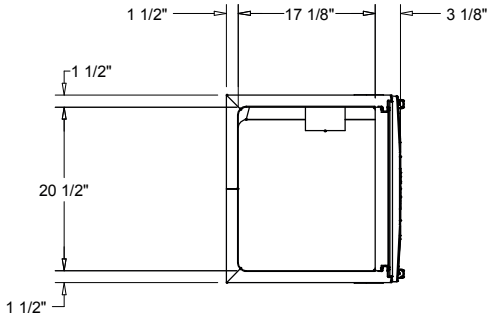
WEIGHT AND CLEARANCE

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2



NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION





AIRHANDLER - TAM4A0C48

DRAWING

Unit Dimensions - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

ELECTRICAL / GENERAL DATA

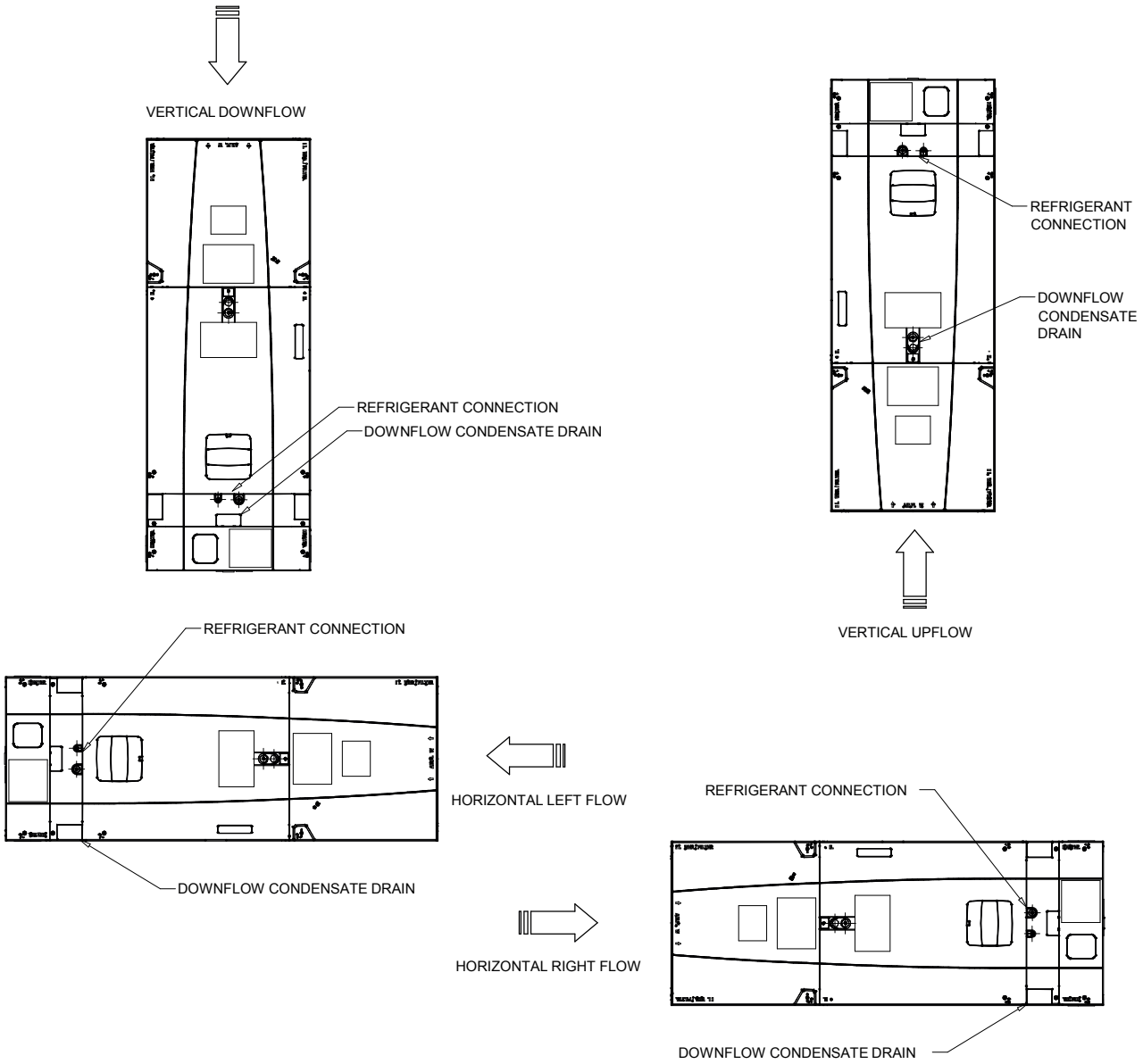
GENERAL (1)(2)(4)		INDOOR MOTOR (1)		FILTERS (3)	
Model:	TAM7A0C48H41SA	Number:	1	Type:	Throwaway
		Horsepower:	0.75	Furnished:	No
Unit Primary Voltage:	208	Motor Speed (RPM):	Variable ECM	Number:	1
Unit Secondary Voltage:	230	Phase:	1	Recommended:	22"x20"x1"
Unit Hertz:	60	Full Load Amps:	4.2		
Unit Phase:	1	Locked Rotor Amps:			
STANDARD (5)		**REFRIGERANT**		**Weights**	
230 Volt / 208 Volt		Type:	R-410A	Shipping:	175.0 lb
Minimum Circuit Ampacity:	5.0/5.0	REF. Line Connections		Net:	163.0 lb
Maximum Overload Protection:	15.0/15.0	Coupling or Conn. Size - Gas:	7/8"		
		Coupling or Conn. Size - Liq.:	3/8"		

ELECTRIC HEAT	
240 Volt / 208 Volt	
Capacity Circuit #1:	14.40/10.80
Capacity Circuit #2:	N/A
Capacity Circuit #3:	N/A
# of Circuit:	1
Phase:	1
Heater Amps Per Circuit Circuit #1:	34.6/30.0
Heater Amps Per Circuit Circuit #2:	N/A
Heater Amps Per Circuit Circuit #3:	N/A
Minimum Circuit Ampacity Circuit #1:	48.0/42.0
Minimum Circuit Ampacity Circuit #2:	N/A
Minimum Circuit Ampacity Circuit #3:	N/A
Maximum Overload Protection Circuit #1:	50.0/45.0
Maximum Overload Protection Circuit #2:	N/A
Maximum Overload Protection Circuit #3:	N/A

NOTES:

1. These air handlers are a.r.i. certified with various split system air conditioners and heat pumps (ari standard 210/240). refer tothesplit system outdoor unit product data guides for performance data.
2. 3/4" male plastic pipe (ref.: astm 1785-76)
3. Minimum filter size for horizontal applications will be based on airflow selection and will be calculated as follows:
   low velocity filter: face area (sq. ft.) = cfm / 300
   high velocity filter: face area (sq. ft.) = cfm / 500
4. For customer ease of filter maintenance, it is recommended that a properly sized, remote filter and grille be installed for horizontal applications. airflow should not exceed the face value of the filter being used
5. Standard mca and mop without electric heat.

Weight, Clearance & Rigging Diagram - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2



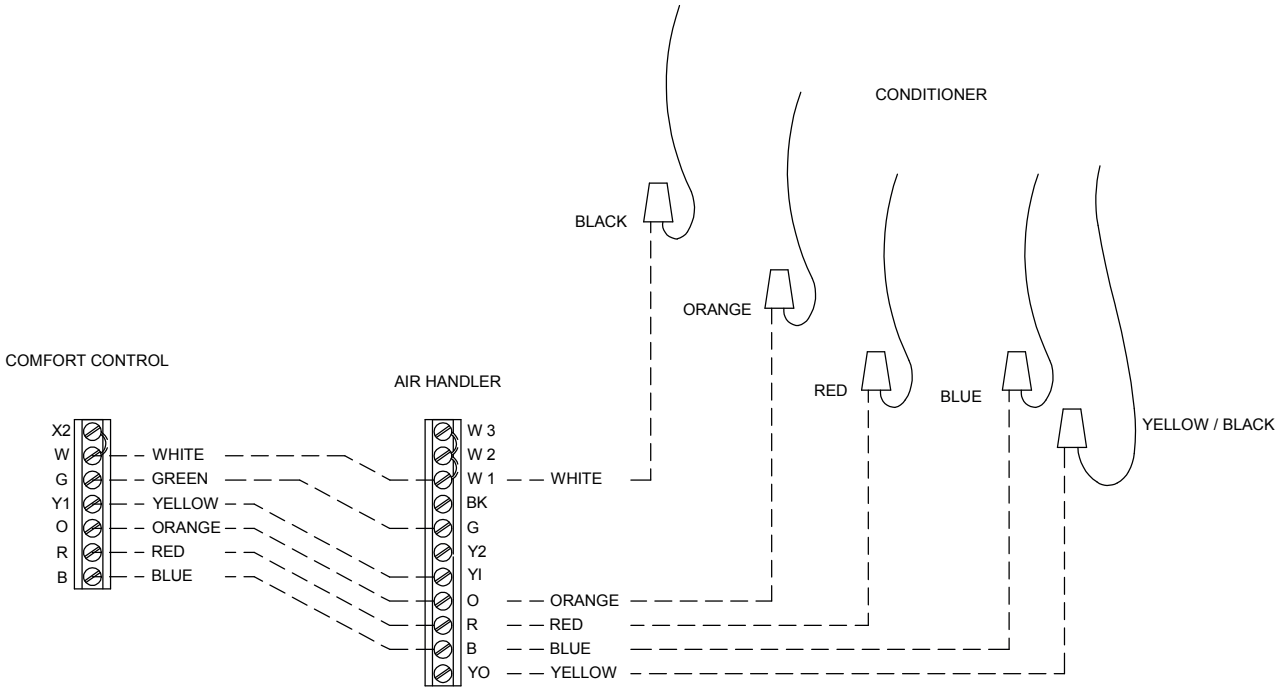
NOTES
1. NO INTERNAL MODIFICATIONS REQUIRED FOR ANY POSITION.
2. BADGE ROTATION WILL BRAND IN CORRECT POSITION.

MINIMUM UNIT CLEARANCE TABLE		
	TO COMBUSTIBLE MATERIALS (REQUIRED)	SERVICE CLEARANCE (RECOMMENDED)
SIDE	0	2"
FRONT	0	21"
BACK	0	0
INLET DUCT	0	0
OUTLET DUCT	0	0

CLEARANCE NOTES:
* 1" FOR THE FIRST 3 FT. OF OUTLET DUCT
WHEN ELECTRIC HEATERS ARE INSTALED EXCEPT
MODELS BAYHTR1405, 1408, AND 1410 ARE APPROVED FOR
0" PLEMUM AND DUCT CLEARANCE IN THE UPFLOW
CONFIGURATION ONLY ON TWE-P MODELS.

Accessory - Split System Air Conditioning Units (Small)
Item: A1 Qty: 2 Tag(s): AH/HP-O-1, AH/HP-O-2

NOTES:
1. FOR MULTIPLE STAGES OF ELECTRIC HEAT, JUMPER W1, W2, AND W3 TOGETHER IF COMFORT CONTROL HAS ONLY ONE STAGE OF HEAT
2. YI AND YO CONNECTIONS MUST BE MADE AS SHOWN FOR FREEZE PROTECTION AND INTERNALLY MOUNTED CONDENSATE OVERFLOW CIRCUITS TO WORK PROPERLY
3. INTERNALLY MOUNTED CONDENSATE SWITCH IS OPTIONAL AND MUST BE ORDERED SEPARATELY
4. IF A 3RD PARTY CONDENSATE OVERFLOW SWITCH IS INSTALLED, IT SHOULD BE WIRED IN SERIES BETWEEN YO AND Y TO THE OUTDOOR UNIT



AIR HANDLER HOOK-UP - TWO STAGE HEATPUMP

FIELD WIRING DIAGRAM

Field Installed Options - Part/Order Number Summary
This is a report to help you locate field installed options that arrive at the jobsite. This report provides part or order numbers for each field installed option, and references it to a specific product tag. It is NOT intended as a bill of material for the job.

Product Family - Split System Air Conditioning Units (Small)

Item	Tag(s)	Qty	Description	Model Number
A1	AH/HP-O-1, AH/HP-O-2	2	1 - 6 Ton Unitary Split Systems (SSC)	4TWR5049E1000-TAM7A0C48H-1S-0----000-0--0

Field Installed Option Description	Part/Ordering Number
Head pressure control	BAYLOAM103
15 kW Electric Heater for 208/240V 3 Phase 60 Hertz	BAYEVBC15LG3AA

Submittal

Prepared For:
2RW Consultants, Inc
100 10th St NE, Suite 102
Charlottesville, VA 22902

Date: *March 31, 2013*

Sold To:
Hess Mechanical
9600 Fallard Court
Upper Marlboro, MD 20772

Job Name:
Loudoun HS 6, LCPS

Trane U.S. Inc. is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product
8	Ductless SSAC

Contractor Coordination Notes:
#1 N/A

Engineer Coordination Notes:
#1 N/A

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Prepared by: Jason Mindlin
Reviewed by: Chris Wood
Trane
30 West Watkins Mill Road
Gaithersburg, MD 20878
Phone: (240) 306-3000
Fax: (240) 306-3300

Table Of Contents

Product Summary **1**

Ductless SSAC (Item A1) **3**

Tag Data 3

Product Data 3

Tag Data - Ductless SSAC (Qty: 8)

Item	Tag(s)	Qty
A1	DSS/CU: A047, A050, C117, D116.1, D116.2, E121, H113, H114	8

Product Data - Ductless SSAC

Item: A1 Qty: 8 Tag(s): DSS/CU-A047, A050,C117, D116.1,2, E121,H113, H114

Air cooled condensing/outdoor unit
Single compressor with crankcase heater and contactor
Anti-short cycle control
Limited Warranty: 6 Year Compressor Warranty & 1 Year Parts Warranty
Low ambient to 0 deg F (Fld)

Console/Wall-mounted/Ceiling mini-split air handling unit
Three-speed fan
Cleanable filter
Wall/ceiling mounting bracket
Built-in temperature controls with remote controller
(1) Disconnect switch (Fld)

Clarifications & Exclusions:

1. **Refrigerant piping with specialties, such as TXV and solenoid valves, etc. to be provided by contractor**
2. **Condensate pump to be provided by contractor as required**
3. **Start-up to be performed by contractor**

Tag	Spec A047, H113	Sub A047, H113	Spec A050, C117, H114	Sub A050, C117, H114	Spec D116.1, D116.2	Sub D116.1, D116.2	Spec E121	Sub E121
Indoor Model	MSY-D36	MSY-D36	MS-A12	MS-A12	MSY-A24	MSY-GE24	PLA-A12	PLA-A12
Outdoor Model	MUY-D36	MUY-D36	MU-A12	MU-A12	MUY-A24	MUY-GE24	PUY-A12	PUY-A12
Capacity (tons)	3	3	1	1	2	2	1	1
SEER	15.1	15.1	13	13	16	19	13.5	13.5
Airflow (cfm)	580	576**	255	254**	385	420**	420	420**
Indoor wt (lbs)	45	40	25	23	40	37	50	49
Cooling (MBH)	35	34.6	12	12	22	22.5	12	12
Electrical (V/ph)	208/1	208-230/1	120/1	115/1	208/1	208-230/1	208/1	208-230/1
MCA	22	21	17	16	18	17.1	14	13
MOP	25	25	20	20	20	20	15	15
Outdoor wt (lbs)	140	126	100	96	140	119	100	90

**Medium Fan Speed

MITSUBISHI ELECTRIC

COOLING & HEATING

TAGS: DSS-A047, H113

Mr.SLIM®
Split-ductless A/C and Heat Pumps

SUBMITTAL DATA: MSY-D36NA-8 & MUY-D36NA-1

36,000 BTU/H WALL-MOUNTED AIR-CONDITIONING SYSTEM

Job Name:	Location:	Date:
Purchaser:	Engineer:	
Submitted to:	For ☐Reference ☐Approval ☐Construction	
System Designation:	Schedule No.:	

GENERAL FEATURES

- Catechin and anti-allergy enzyme filters for high air-purification capabilites
- Updated sleek, compact indoor unit design
- Remote-controlled wide airflow enables ideal horizontal air distribution
- Self-check function—onboard diagnostics
- Advanced microprocessor control
- Auto restart following a power outage
- Hand-held Wireless Remote Controller
- Anti-allergy Enzyme Filter
- Limited warranty: five years on parts and defects and seven years on compressors

OPTIONAL ACCESSORIES

Outdoor Unit

☐ Drain Socket Assembly (MAC-811DS)

Indoor Unit

☐ Three-pole Disconnect Switch (TAZ-MS303)
☐ Condensate Pump (230V; SI3100-230)

Controller Options

☐ Wireless Remote Controller Kit (MHK1) with Remote Controller (MRCH1), Wireless Receiver (MIFH1), and cable (MRC1)*
☐ Portable Controller (MCCH1; for use with Wireless Remote Controller Kit MHK1)*
☐ Setback down to 50°F when used with MRCH1 Remote Controller
☐ Outdoor Air Sensor (MOS1; for use with Remote Controller (MRCH1), Wireless Remote Controller Kit (MHK1) and Portable Controller (MCCH1)*

*See Submittal for information on each option.

☐ Wall-mounted Wired Remote Controller (PAR-21MAA; req. MAC-3971F)
☐ MA Contact Terminal Interface (MAC-397IF)
☐ M-NET Control Adapter (MAC-399IF)
☐ Remote Temperature Sensor (M21-JKO-307)
☐ Lockdown Bracket for Hand-held Controller (RCMKP1CB)

Cooling*

Rated Capacity . . . . . 34,600 Btu/h
Minimum Capacity . . . . . 9,800 Btu/h
SEER . . . . . 15.1 Btu/h/W
Total Input . . . . . 4,240 W

* Rating Conditions (Cooling) - Indoor: 80°F (27°C) DB, 67°F (19°C) WB; Outdoor: 95°F (35°C) DB, 75°F (24°C) WB.

Power Supply . . . . . 208 / 230V, 1-Phase, 60 Hz
Breaker Size . . . . . 25 A

Voltage

Indoor - Outdoor S1-S2 . . . . . AC 208 / 230V
Indoor - Outdoor S2-S3 . . . . . DC 12-24V
Indoor - Remote Controller . . . . . Wireless

OPERATING RANGE

		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	90°F (32°C) DB, 73°F (23°C) WB	115°F (46°C) DB
	Minimum	67°F (19°C) DB, 57°F (14°C) WB	14°F (-10°C) DB

Indoor Unit: MSY-D36NA-8

Wireless Remote Controller

Outdoor Unit: MUY-D36NA-1

Indoor Unit

MCA . . . . . 1 A
Fan Motor . . . . . 0.76 F.L.A.
Airflow
Cooling (Lo - Med - Hi - Powerful) 389 - 639 - 848 - 887 Dry CFM
350 - 576 - 763 - 798 Wet CFM
Sound Pressure Level
Cooling (Lo - Med - Hi - Powerful) . . . . . 32 - 42 - 49 - 51 dB(A)

DIMENSIONS	UNIT INCHES / MM
W	46-1/16 / 1,170
D	11-5/8 / 295
H	14-3/8 / 365

Weight . . . . . 40 lbs. / 18 kg
External Finish . . . . . Munsell No. 1.0Y 9.2 / 0.2
Field Drainpipe Size O.D. . . . . 5/8" / 15.88 mm

Outdoor Unit

Compressor . . . . . DC Inverter-driven Rotary
MCA . . . . . 21 A
Fan Motor . . . . . 0.93 F.L.A.
Sound Pressure Level
Cooling . . . . . 56 dB(A)

DIMENSIONS	INCHES / MM
W	33-1/16 / 840
D	13 / 330
H	33-7/16 / 849

Weight . . . . . 126 lbs. / 57 kg
External Finish . . . . . Munsell No. 3Y 7.8 / 1.1
Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . . 5/8" / 15.88 mm
Liquid Side . . . . . 3/8" / 9.53 mm
Max. Refrigerant Pipe Length . . . . . 100' / 30 m
Max. Refrigerant Pipe Height Difference . . . . . 50' / 15 m
Connection Method . . . . . Flared

R410A INVERTER

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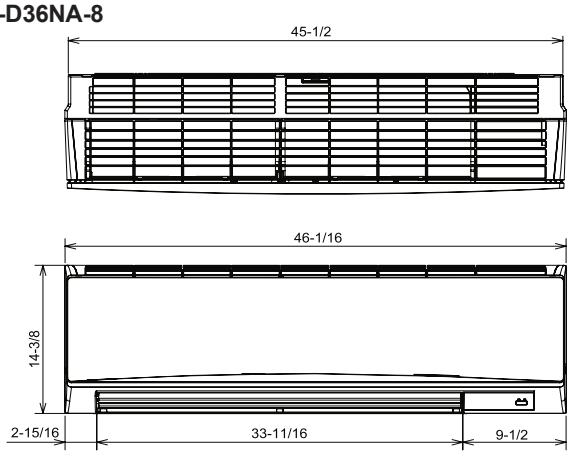
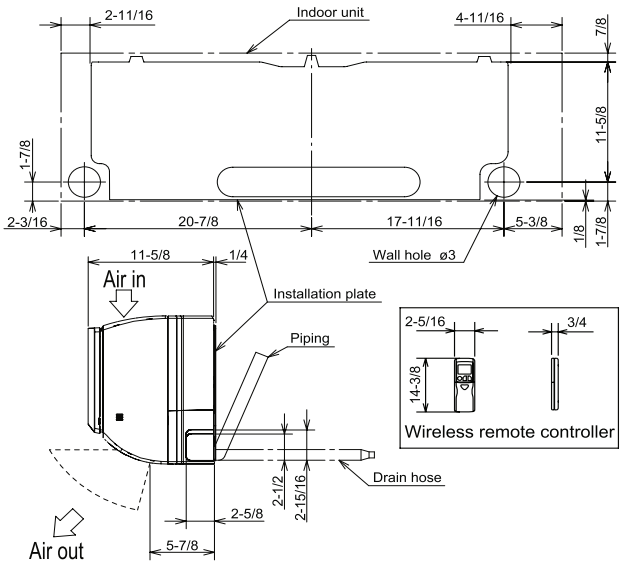
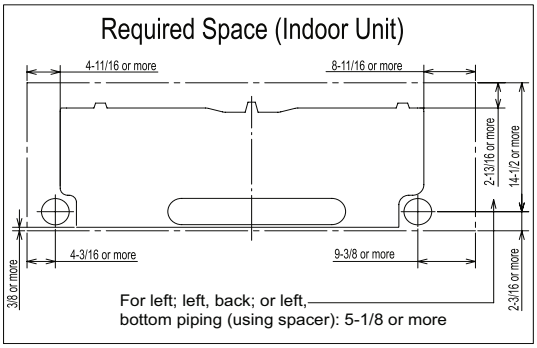
DIMENSIONS: MSY-D36NA-8 & MUY-D36NA-1

MSY-D36NA-8

Unit : inch



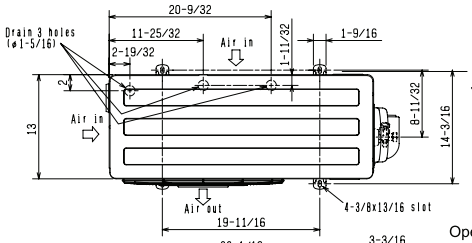


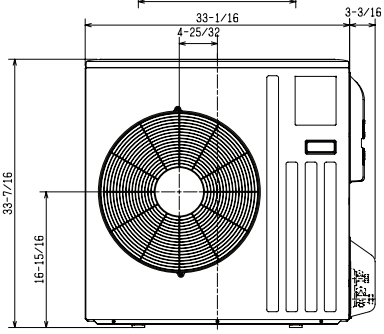

Required Space (Indoor Unit)
4-11/16 or more
8-11/16 or more
2-13/16 or more
14-1/2 or more
4-3/16 or more
9-3/8 or more
3/8 or more
2-3/16 or more
For left; left, back; or left, bottom piping (using spacer): 5-1/8 or more

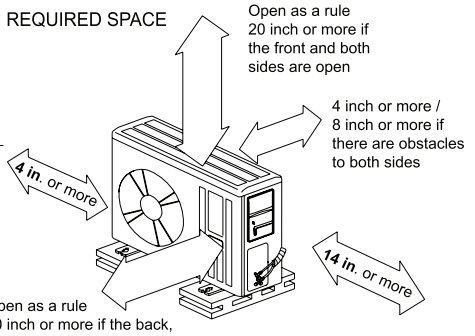
	Piping	Insulation
Liquid line	ø3/8 19-11/16 (Flared connection ø3/8)	ø1-1/4 O.D. ø9/16 I.D.
Gas line	ø5/8 16-7/8 (Joint connection ø5/8)	ø1-15/16 O.D. ø1-1/4 I.D.
Joint	ø5/8 (Flared connection ø5/8)	ø1-15/16 O.D. ø1-1/4 I.D.
Drain hose	Insulation ø1-1/8 Connected part ø9/16 O.D.	

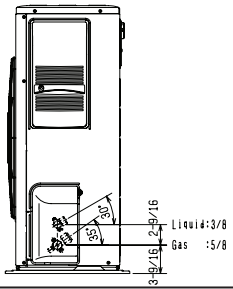
MUY-D36NA-1

Unit: inch






REQUIRED SPACE
Open as a rule
20 inch or more if
the front and both
sides are open
4 inch or more /
8 inch or more if
there are obstacles
to both sides
4 in. or more
14 in. or more
Open as a rule
20 inch or more if the back,
both sides and top are open



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FORM# MSY-D36NA-8 ~ MUY-D36NA-1 - 201108

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HVAC Advanced Products Division

TAGS: DSS-A050, C117, H114

Mr. SLIM®

Split Zoning A/C and Heat Pumps

SUBMITTAL DATA: MS-A12WA & MU-A12WA

12,000 BTU/H WALL-MOUNTED AIR-CONDITIONING SYSTEMS

Job Name: Location: Date:

Purchaser: Engineer:

Submitted to: For ☐ Reference ☐ Approval ☐ Construction

Unit Designation: Schedule No.:

GENERAL FEATURES

- Wall-mounted indoor unit for residential applications
- Compact side discharge outdoor unit
- Zone control
- Quiet operation for both indoor and outdoor units
- "Powerful Mode" function permits system to temporarily run at a lower/higher temperature with an increased fan speed, which quickly brings the room to the optimum comfort level
- Wireless remote controller is included
- Indoor unit powered from outdoor unit using A-Control
- Automatic restart following a power outage
- Self-check functon — onboard diagnostics
- Dry Mode function is standard
- Limited warranty: five years on parts and defects and seven years on compressors

Indoor Unit: MS-A12WA

Outdoor Unit: MU-A12WA

Wireless Remote Controller

OPTIONAL ACCESSORIES

Outdoor Unit

- Low-ambient Head-pressure Controller (ICM-326HM-1)

Indoor Unit

- Condensate Pump (115V; SI3100-115)

Cooling*

Rated Capacity . . . . . 12,000 Btu/h
SEER 13.0
Total Input . . . . . 1,070 W

* Rating Conditions (Cooling) - Indoor: 80°F (27°C) DB, 67°F (19°C) WB; Outdoor: 95°F (35°C) DB, 75°F (24°C) WB.

Power Supply . . . . . 115V, 1-Phase, 60 Hz
Breaker Size . . . . . 20 A

Voltage

Indoor - Outdoor L1-N . . . . . AC 115V
Indoor - Outdoor L2 . . . . . AC 115V
Indoor - Remote Controller . . . . . Wireless

OPERATING RANGE

		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	95°F (35°C) DB, 71°F (22°C) WB	115°F (46°C) DB
	Minimum	67°F (19°C) DB, 57°F (14°C) WB	67°F (19°C) DB

Indoor Unit

MCA . . . . . 1.2 A
Fan Motor . . . . . 0.95 F.L.A.
Airflow (Lo - Med - Hi - Powerful)
Cooling . . . . . 222 - 286 - 406 - 446 Dry CFM
198 - 254 - 363 - 399 Wet CFM

Sound Pressure Level (Lo - Med - Hi - Powerful)
Cooling . . . . . 33 - 38 - 45 - 47 dB(A)

DIMENSIONS	UNIT INCHES / MM
W	30-11/16 / 780
D	8-1/4 / 210
H	11-3/4 / 299

Weight . . . . . 23 lbs. / 10 kg
External Finish . . . . . Munsell No. 3Y 7.8 / 1.1
Field Drainpipe Size O.D. . . . . 5/8" / 15.88 mm
Remote Controller . . . . . Wireless

Outdoor Unit

Compressor . . . . . Single Rotary
MCA . . . . . 16 A
Fan Motor . . . . . 0.93 F.L.A.
Sound Pressure Level
Cooling . . . . . 52 dB(A)

DIMENSIONS	INCHES / MM
W	33-7/16 / 849
D	11-7/16 / 291
H	23-13/16 / 605

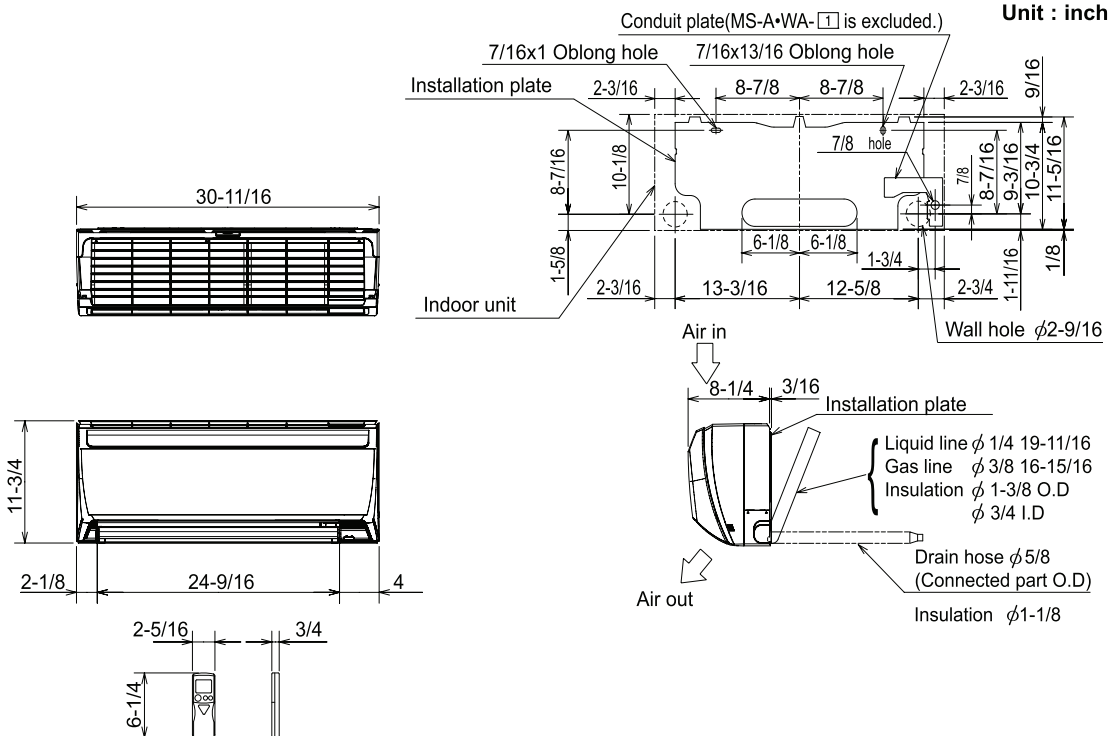
Weight . . . . . 96 lbs. / 44 kg
External Finish . . . . . Munsell 3Y 7.8 / 1.1

Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . . 1/2" / 12.7 mm
Liquid Side . . . . . 1/4" / 6.35 mm
Max. Refrigerant Pipe Length . . . . . 65 ft. / 19 m
Max. Refrigerant Pipe Height Difference . . . . . 35 ft. / 11 m
Connection Method . . . . . Flared

DIMENSIONS: MS-A12WA & MU-A12WA

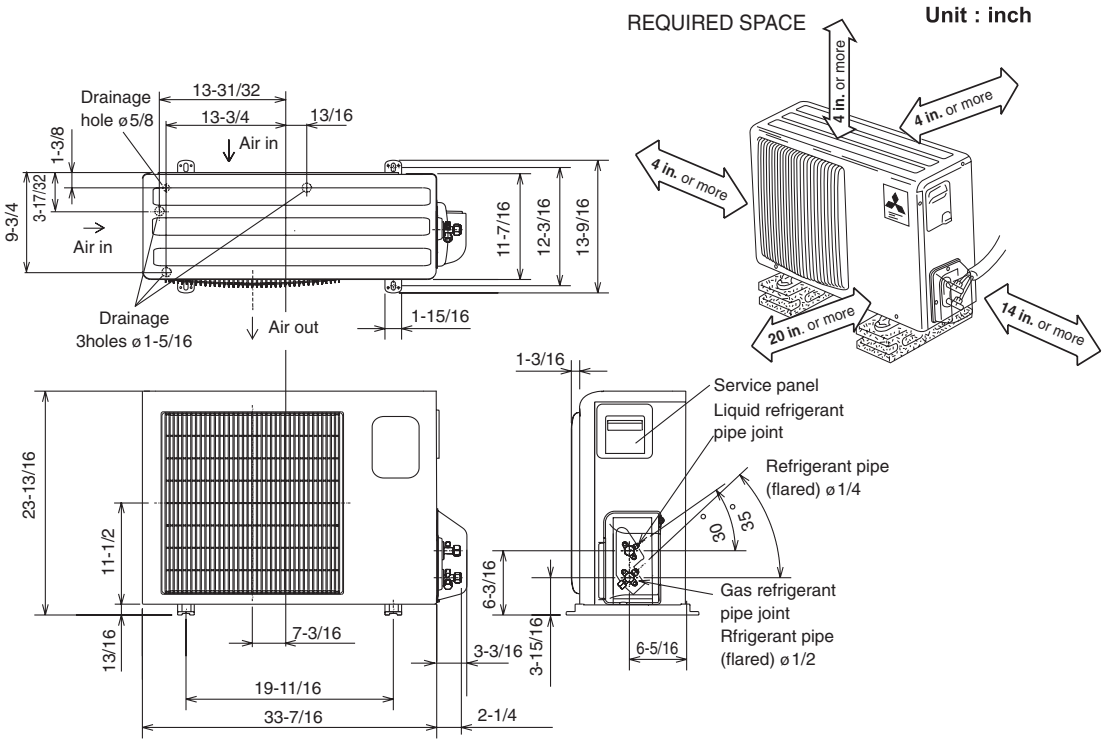
MS-A12WA

Unit : inch



MU-A12WA

Unit : inch



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HVAC Advanced Products Division

TAGS: DSS-D116.1, D116.2

Mr. SLIM®

Split Zoning A/C and Heat Pumps

SUBMITTAL DATA: MSY-GE24NA & MUY-GE24NA. . . . . 24,000 BTU/H WALL-MOUNTED AIR-CONDITIONING SYSTEMS

Job Name: Location: Date:

Purchaser: Engineer:

Submitted to: For ☐ Reference ☐ Approval ☐ Construction

Unit Designation: Schedule No.:

GENERAL FEATURES

- Wall-mounted indoor unit
- Nano Platinum and and Anti-allergy Enzyme filters are included
- Quiet operation
- Choice of fan speeds: Low, Medium, High, and Powerful
- Wireless handheld remote controller is included; PAR-21MAA wired remote controller can be installed as an option
- Indoor unit powered from outdoor unit using A-Control
- Auto restart following a power outage
- Limited warranty: five years on parts and defects and seven years on the compressor

OPTIONAL ACCESSORIES

Outdoor Unit

- ☐ Three-pole Disconnect Switch (TAZ-MS303)
- ☐ Air Outlet Guide (MAC-856SG)
- ☐ Mounting Base (DSD-400N)
- ☐ Mounting Pad (ULTRILITE1)

Indoor Unit

- ☐ Condensate Pump (SI3100-230; 230V)
- ☐ Replacement Anti-allergy Enzyme Filters (MAC-2310FT-E; 2/set)

Controller Options

- ☐ Wall-mounted Wired Controller (PAR-21MAA; req. MAC-3971F)
- ☐ MA Contact Terminal Interface (MAC-397IF)
- ☐ M-NET Control Adapter (MAC-399IF)
- ☐ Remote Temperature Sensor (M21-JKO-307)
- ☐ Lockdown Bracket for Handheld Controller (RCMKP1CB)

Indoor Unit: MSY-GE24NA

Outdoor Unit: MUY-GE24NA

ENERGY STAR

Wireless Handheld Remote Controller

Indoor Unit

MCA . . . . . 1 A
Fan Motor . . . . . 0.76 F.L.A.
Airflow (Lo - Med - Hi - Powerful)
Cooling . . . . . 388 - 469 - 628 - 738 Dry CFM
347 - 420 - 562 - 661 Wet CFM

Sound Pressure Level (Lo - Med - Hi - Powerful)
Cooling . . . . . 34 - 41 - 49 - 53 dB(A)

DIMENSIONS	UNIT INCHES / MM
W	43-5/16 / 1,116
D	9-3/8 / 238
H	12-13/16 / 325

Weight. . . . . 37 lbs. / 17 kg
Moisture Removal. . . . . 2.7 pt./h
External Finish . . . . . Munsell No. 1.0Y 9.2 / 0.2
Field Drainpipe Size O.D. . . . . 5/8" / 15.88 mm
Remote Controller . . . . . Wireless Handheld
(Optional Wired Remote Controller PAR-21MAA; see Data Submittal Sheet)

Outdoor Unit

Compressor . . . . . DC Inverter-driven Twin Rotary
MCA . . . . . 17.1 A
Fan Motor . . . . . 0.93 F.L.A.
Sound Pressure Level (Cooling). . . . . 55 dB(A)

DIMENSIONS	INCHES / MM
W	33-1/16 + 3-3/16 / 840 + 81
D	13 / 330
H	34-5/8 / 880

Weight . . . . . 119 lbs. / 54 kg
External Finish . . . . . Munsell No. 3Y 7.8 / 1.1

Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . . 5/8" / 15.88 mm
Liquid Side. . . . . 3/8" / 6.35 mm
Max. Refrigerant Pipe Length. . . . . 100' / 30 m
Max. Refrigerant Pipe Height Difference . . . . . 50' / 15 m
Connection Method . . . . . Flared

Cooling*

Rated Capacity . . . . . 22,500 Btu/h
Minimum to Maximum Capacity Range . . . . . 8,200 - 31,400 Btu/h
SEER . . . . . 19.0 Btu/h/W
EER . . . . . 12.5 Btu/h/W
Total Rated Input . . . . . 1,800 W

* Rating Conditions (Cooling) - Indoor: 80°F (27°C) DB, 67°F (19°C) WB; Outdoor: 95°F (35°C) DB, 75°F (24°C) WB.

Electrical Requirements

Power Supply . . . . . 208 / 230V, 1-Phase, 60 Hz
Breaker Size . . . . . 20 A

Voltage

Indoor - Outdoor S1-S2 . . . . . AC 208 / 230V
Indoor - Outdoor S2-S3 . . . . . DC 12-24V
Indoor - Remote Controller . . . . . Wireless

OPERATING CONDITIONS

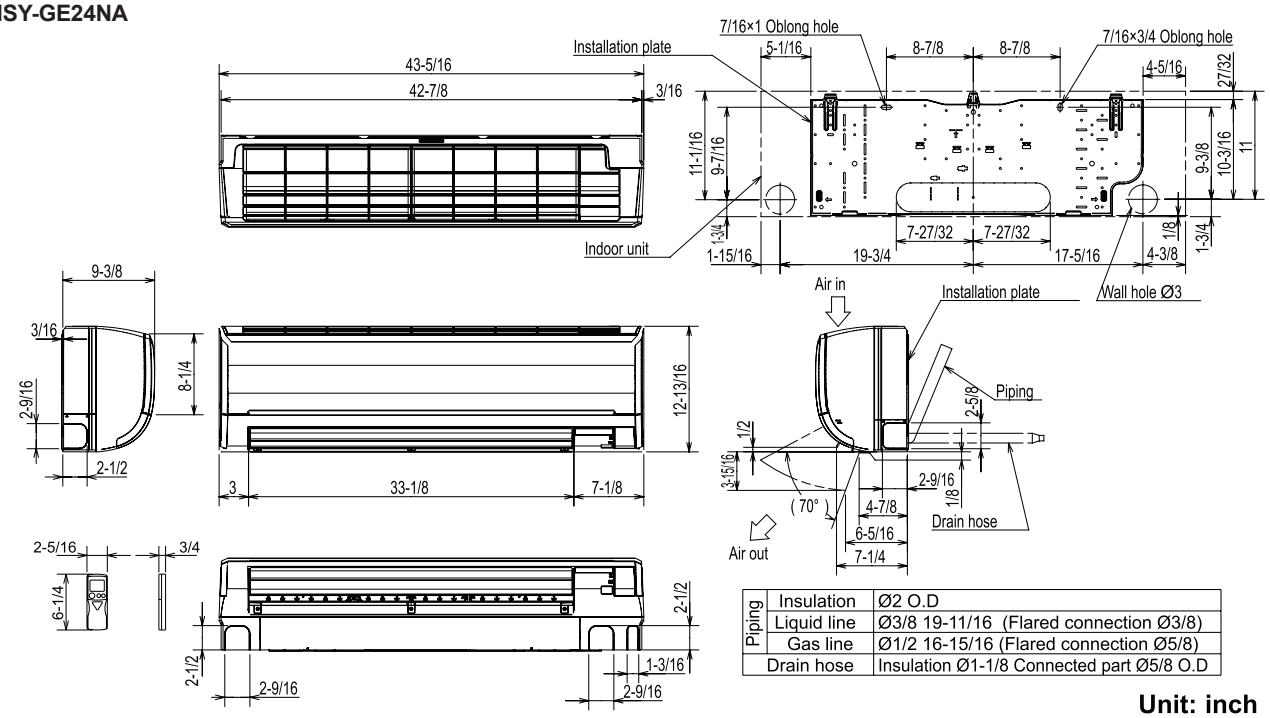
		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	90°F (32°C) DB, 73°F (23°C) WB	115°F (46°C) DB
	Minimum	67°F (19°C) DB, 57°F (14°C) WB	14°F (-10°C) DB

R410A

INVERTER

DIMENSIONS: MSY-GE24NA & MUY-GE24NA

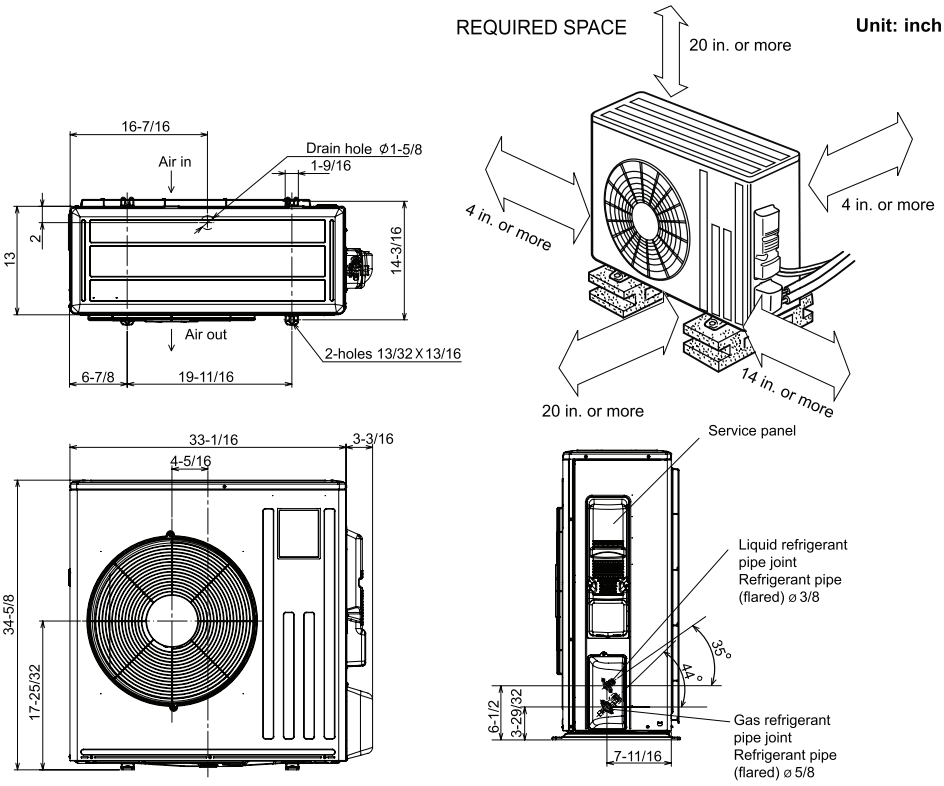
MSY-GE24NA



Piping		
	Insulation	Ø2 O.D
	Liquid line	Ø3/8 19-11/16 (Flared connection Ø3/8)
	Gas line	Ø1/2 16-15/16 (Flared connection Ø5/8)
	Drain hose	Insulation Ø1-1/8 Connected part Ø5/8 O.D

Unit: inch

MUY-GE24NA



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TAG: DSS-E121

Mr.SLIM®

Split-ductless A/C and Heat Pumps

SUBMITTAL DATA: PLA-A12BA & PUY-A12NHA3

12,000 BTU/H CEILING CASSETTE AIR-CONDITIONING SYSTEM

Job Name: Location: Date:

Purchaser: Engineer:

Submitted to: For ☐ Reference ☐ Approval ☐ Construction

Unit Designation: Schedule No.:

GENERAL FEATURES

- Compact side-discharge outdoor unit
- Quiet operation—indoor and outdoor units
- Built-in drain lift mechanism for condensate removal; lifts to 33-7/16 in.
- Wide air flow pattern for better air distribution
- Auto wave airflow in heating mode—unit independently cycles through horizontal and vertical positions for more even heat distribution
- Independent vane adjustment
- Automatic fan speed control
- Self-check function—integrated diagnostics
- Advanced microprocessor control
- Hard-wired, wall-mounted, remote controller (PAR-21MAA)
- Limited warranty: five years on parts and defects and seven years on compressors

OPTIONAL ACCESSORIES

Indoor Unit

- Multi-function Casement (PAC-SH53TM-E)
- Air Outlet Shutter Plates (PAC-SH51SP-E)
- Wireless Signal Receiver (PAR-SA9FA-E)
- Wireless Remote Controller (PAR-FL32MA)
- i-see Sensor Corner Panel (PAC-SA1ME-E)
- High-efficiency (MERV 10) Filter (PAC-SH59KF-E)

Outdoor Unit

- M-NET Adapter (PAC-SF80MA-E)
- Air Outlet Guide (PAC-SG58SG-E)
- Wind Baffle (WB-PA1)

Cooling*

Rated Capacity . . . . . 12,000 Btu/h
Minimum Capacity . . . . . 6,000 Btu/h
SEER . . . . . 13.5 Btu/h/W
Total Input . . . . . 1,260 W

* Rating Conditions (Cooling) - Indoor: 80°F (27°C) DB, 67°F (19°C) WB. Outdoor: 95°F (35°C) DB, 75°F (24°C) WB.

Electrical Requirements

Power Supply . . . . . 208 / 230V, 1-Phase, 60 Hz
Breaker Size . . . . . 15 A

Voltage

Indoor - Outdoor S1-S2 . . . . . AC 208 / 230V
Indoor - Outdoor S2-S3 . . . . . DC 24V
Indoor - Remote Controller . . . . . DC 12V

OPERATING RANGE

		Indoor Intake Air Temp.	Outdoor Intake Air Temp.
Cooling	Maximum	95°F (35°C) DB, 71°F (22°C) WB	115°F (46°C) DB
	Minimum	67°F (19°C) DB, 57°F (14°C) WB	0°F** (-18°C) DB

** With optional wind baffle accessory installed. If not installed, the minimum temperature will be 23°F (-5°C) DB.

Indoor Unit: PLA-A12BA

Remote Controller: PAR-21MAA

Outdoor Unit: PUY-A12NHA3

Indoor Unit

MCA . . . . . 1 A
Fan Motor . . . . . 0.51 F.L.A.
Fan Motor Output . . . . . 50 W
Airflow (Lo - M1 - M2 - Hi) . . . . . 390 - 420 - 460 - 530 Dry CFM
350 - 390 - 420 - 490 Wet CFM
Sound Level (Lo - M1 - M2 - Hi) . . . . . 27 - 28 - 29 - 31 dB(A)

DIMENSIONS	UNIT INCHES / MM	PANEL INCHES / MM
W	33-1/16 / 840	37-3/8 / 950
D	33-1/16 / 840	37-3/8 / 950
H	10-3/16 / 258	1-3/8 / 35

Weight (Unit/Grille)
lbs. . . . . 49 / 13
kg . . . . . 22 / 6
External Finish (Grille) . . . . . Munsell No. 6.4Y 8.9 / 0.4
Field Drainpipe Size O.D. . . . . 1-1/4" / 32 mm
Wall-mounted Remote Controller PAR-21MAA
(See Data Submittal Sheet)

Outdoor Unit

Compressor . . . . . DC Inverter-driven Rotary
MCA . . . . . 13 A
Fan Motor . . . . . 0.35 F.L.A.
Sound Pressure Level (Cooling) . . . . . 46 dB(A)

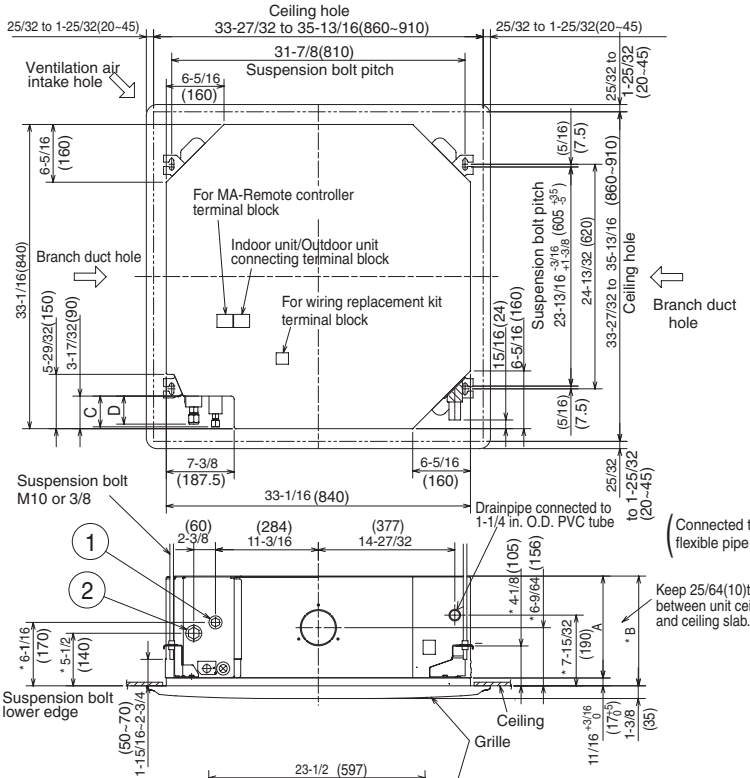
DIMENSIONS	INCHES / MM
W	31-1/2 / 800
D	13 + 7/8 / 330 + 23
H	23-5/8 / 600

Weight . . . . . 90 lbs. / 41 kg
External Finish . . . . . Munsell No. 3Y 7.8 / 1.1
Refrigerant Type R410A
Refrigerant Pipe Size O.D.
Gas Side . . . . . 1/2" / 12.7 mm
Liquid Side . . . . . 1/4" / 6.35 mm
Max. Refrigerant Pipe Length . . . . . 100' / 30 m
Max. Refrigerant Pipe Height Difference . . . . . 100' / 30 m
Connection Method . . . . . Flared

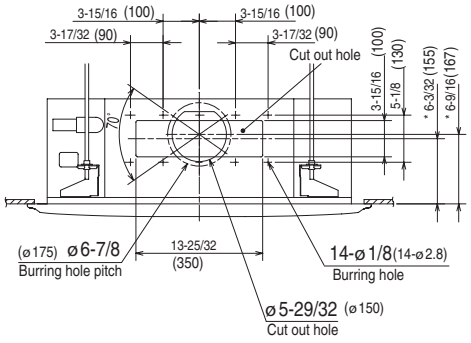
R410A INVERTER

DIMENSIONS: PLA-A12BA

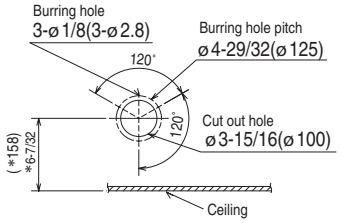
Unit : inch(mm)



Detail connecting of branch duct (nominal 6" round or nominal 4 x 14" rectangular)

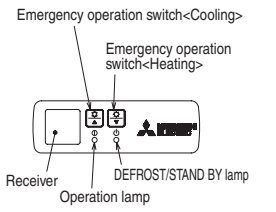


Detail drawing of ventilation air intake connection



In case of standard grille

In case of wireless remote controller

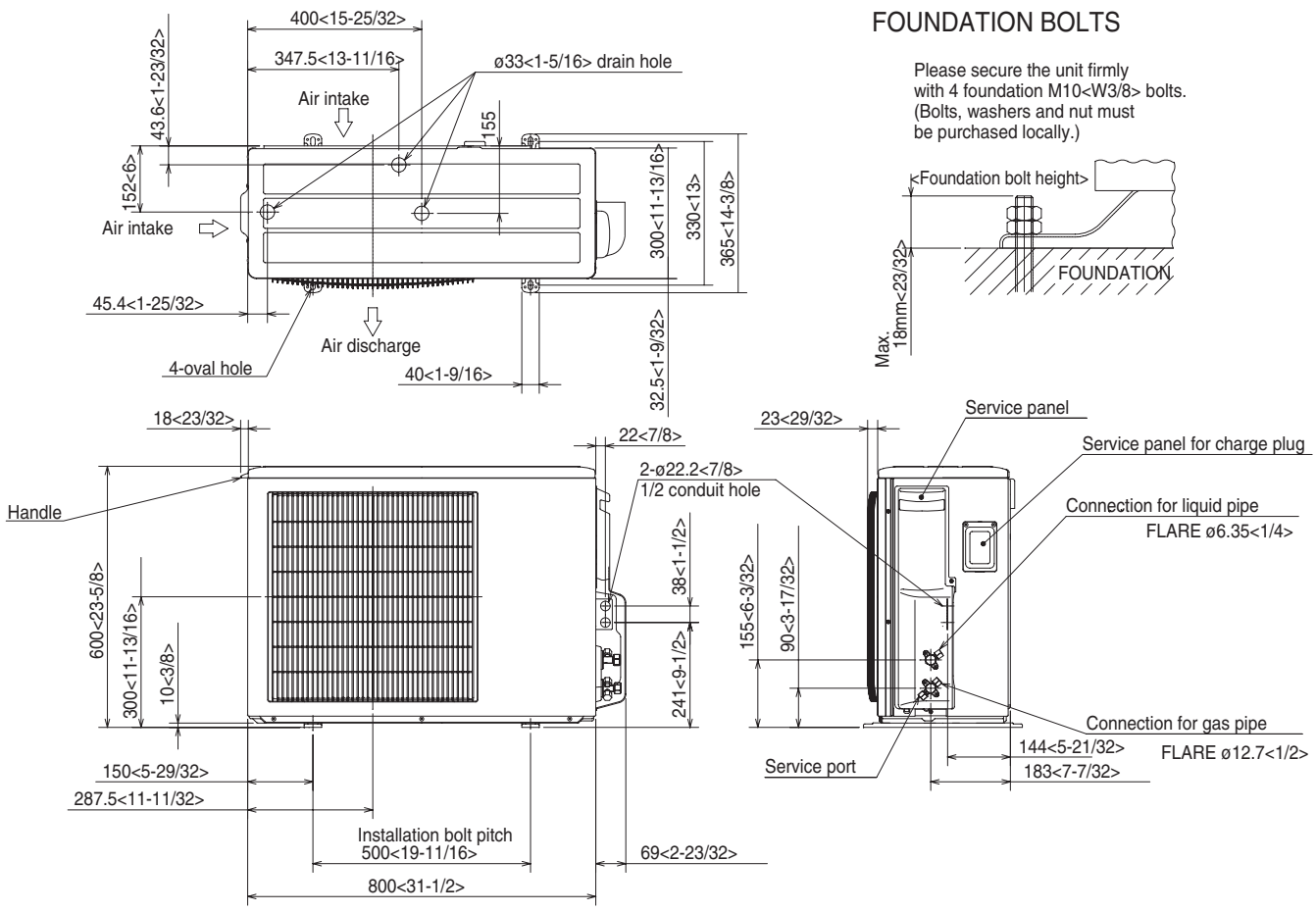


Note1. Use 1-1/4 in. O.D. (32) PVC TUBE.
Drain lift mechanism is included.
2. Suspension bolt, use M10 or W3/8.
(Field supplied)
3. Electrical box may be removed for service purposes.
Make sure to slack the electrical wire little bit for control/power wires connection.
4. The height of the indoor unit is adjustable with the grille attached.
5. For the installation of the optional high efficiency filter, the optional multi-functional casement is required.
1) Add 5-5/16 (135mm) to the dimensions marked with an * in the figures
2) The optional high efficiency filter required optional multi-functional casement.
6. When installing the branch ducts, be sure to insulate adequately.
Otherwise condensation may occur.
7. As for necessary installation/service space, please refer to the bottom left figure.

Models	①	②	A	B	C	D
PLA-A12BA PLA-A18BA	Refrigerant pipe ····ø6.35mm Flared connection ····1/4	Refrigerant pipe ····ø12.7mm Flared connection ····1/2	9-1/2 (241)	10-3/16 (258)	3-5/32 (80)	2-29/32 (74)
PLA-A24BA PLA-A30BA	Refrigerant pipe ····ø9.52mm Flared connection ····3/8	Refrigerant pipe ····ø15.88mm Flared connection ····5/8	11-1/16 (281)	11-3/4 (298)	3-11/32 (85)	3-1/32 (77)
PLA-A36BA PLA-A42BA						

DIMENSIONS: PUY-A12NHA3

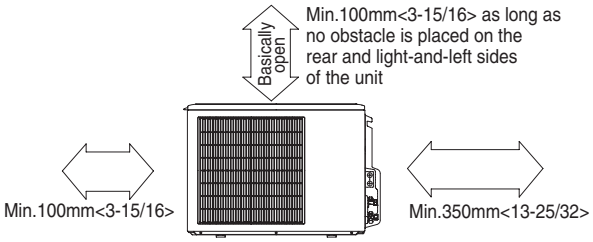
Unit : mm<inch>

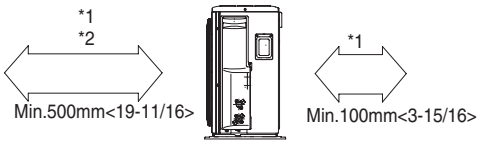


FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation M10<W3/8> bolts. (Bolts, washers and nut must be purchased locally.)

Clearance space needed around the outdoor unit





2 sides should be open in the right, left and rear side.

PIPING-WIRING DIRECTION

Piping and wiring connection can only be made from the back.

Minimum installation space for outdoor unit

If the unit is installed in a place where short cycle can occur, cooling and heating capacity might be reduced by 10%. Using an air outlet guide (PAC-SG58SG-E) will help deflect exhaust air and improve performance.

AHRI CERTIFIED™ www.ahridirectory.org
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AHRI Standard 210/240
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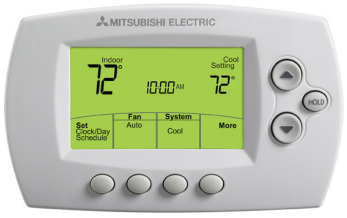
Mr.SLIM®
Split-ductless A/C and Heat Pumps

SUBMITTAL DATA: MHK1 REMOTE CONTROLLER KIT FOR M-SERIES AND P-SERIES

Job Name:	Location:	Date:
Purchaser:	Engineer:	
Submitted to:	For ☐Reference ☐Approval ☐Construction	
System Designation:	Schedule No.:	

MHK1 REMOTE CONTROLLER KIT INCLUDES:

MRCH1 REMOTE CONTROLLER



- For use with P-Series NHA4 systems, SEZ-4/SUZ one-to-one systems, SLZ/SUZ one-to-one systems, MXZ-B multi-zone systems, MSY/MSZ, and MFZ indoor units
- Backlit, easy-to-read display
- Supports both Fahrenheit and Celsius
- User functions allow user to set:
  - On/Off
  - Operation modes cool,heat, drying, fan
  - Set temperature (separate dual set points for heat and cool)
  - Fan speed setting
  - Airflow direction
- Day/Time display with a 12-hour clock
- Filter sign display
- Optimal start
- Adjustable auto deadband
- Space temperature offset adjustment
- Display outside temperature and humidity (requires optional MOS1, sold separately)
- Hold function
- Temporary schedule override
- Reset to factory default
- Auto lock display
- Timer Operation:
  - Daily Timer: On/Off times can be set up to 4 times per day in 15-minute increments.
  - Weekly Timer: On/Off times can be set up to 4 times per day of the week in 15-minute increments. Choice of 5-2 and 5-1-1 weekly schedules for heat, cool, auto (separate for each mode)
  - Auto-off Timer: Turns indoor unit Off at scheduled time up to 24 hours in advance
- Room Temperature: Displays room temperature sensed either at the indoor unit or at the remote controller (default)
- Set temperature range limits (dependent on the system connected):
  Cooling from 50° to 99°F
  Heating from 40° to 90°F
  Auto from 50° to 90°F with dual temperature setting
- Diagnostics: Displays and records error codes
- No addressing required
- Can be integrated with other RedLINK™ devices
- Wiring: Connects using five-conductor cable from MIFH1 Wireless Receiver (cable included) to indoor unit; wireless RF from the MIFH1 Wireless Receiver to the MRCH1 Remote Controller
- Dimensions: 3-9/16" H x 5-13/16" W x 1-1/2" D (147 x 38 x 91mm)
- Uses two “AA” alkaline batteries (included)

MIFH1 WIRELESS RECEIVER

- Mounts next to or near indoor units to allow MRCH1 Remote Controller operation of P-Series NHA4 systems, SEZ-4/SUZ one-to-one systems, SLZ/SUZ one-to-one systems , MXZ-B multi-zone systems, MSY/MSZ, and MFZ indoor units
- Dimensions: 6-7/16” H x 3-1/4” W x 1-5/16” D (164 x 82.5 x 34 mm)

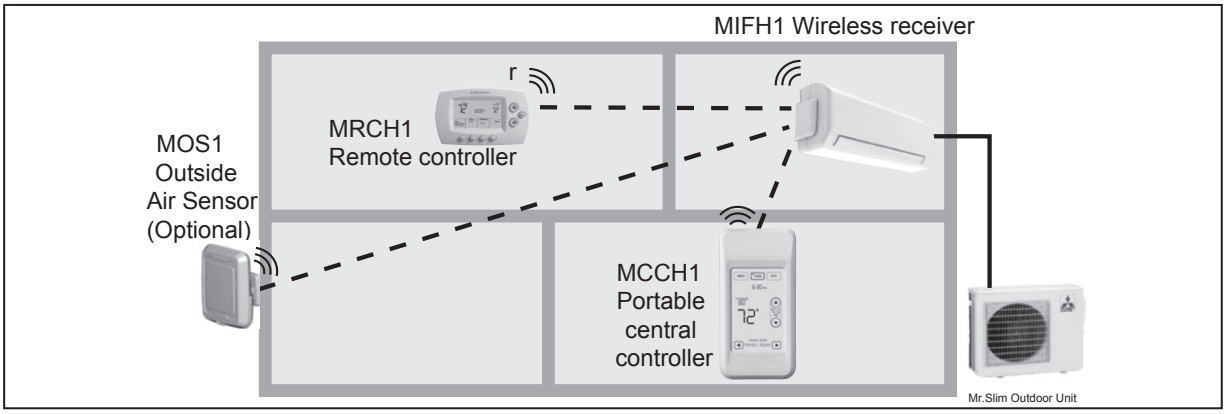
MRC1 CABLE

- Connects MIFH1 Wireless Receiver to five-pin CN105 on indoor unit control board
- Five-conductor wire with preterminated ends
- Length: 6-1/2' (2 m)

OPTIONAL ACCESSORIES

- ☐ Portable Central Controller (MCCH1; for use with Wireless Remote Controller Kit MHK1)*
- ☐ Outdoor Air Sensor (MOS1; for use with Wireless Remote Controller Kit MHK1)*

*See Submittal for information on each option.



FORM# MHK1 - 201108
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MITSUBISHI ELECTRIC
HVAC Advanced Products Division

PRODUCT DATA SHEET

A-Control Disconnect Switch

Catalog #: TAZ-MS303

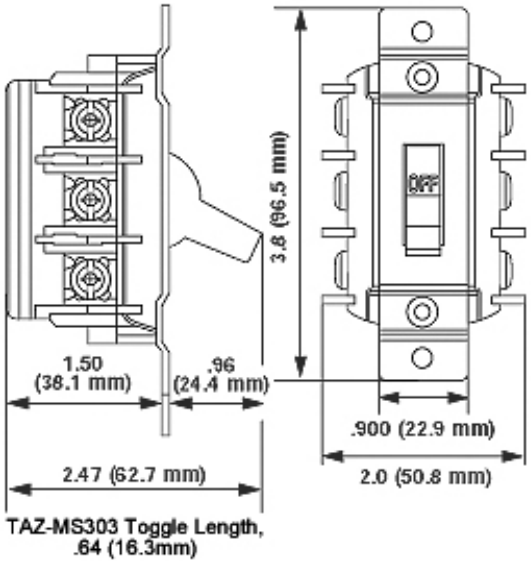
UPC# 07847702032

30 Amp, 600 Volt, Toggle Three-pole AC Switch, Industrial Grade, Non-grounding, Side Wired, - Black

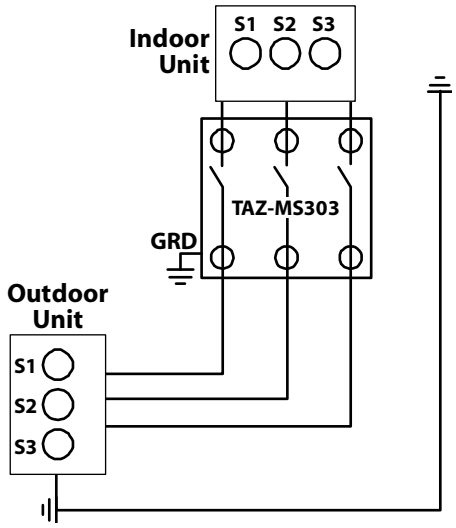
Three-pole

Product Features:

Ground:	Non-grounding
Amperage:	30 Amp
Voltage:	600 Volt
HP Rating:	3HP-120V 7-1/2HP-240V 15HP-480V 20HP-600V
Termination:	Side
Actuator Material:	Valox
Body Material:	Rynite
Strap Material:	Nickel-plated brass
Color:	Black
Standards and Certifications:	UL/CUL
Warranty:	10 year limited
Installation:	2” x 4” electrical wall box with switch cover plate (by others)



Wiring Diagram 3-Pole



SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	Use with:
	TAZ-MS303	
JOB NUMBER:		

Specifications subject to change without notice

Effective: 10/2/2006

Mitsubishi Electric Advanced Products Division
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Suwanee, GA 30024

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